

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <i>ENGINEERING and COMPLIANCE</i>  APPLICATION PROCESSING AND CALCULATIONS	PAGES 6	PAGE 1
	APPL. NO. Below	DATE 8/22/2012
	PROCESSED BY T. Iwata	CHECKED BY

Royal Paper Box  
1105 S. Maple Ave.  
Montebello, CA 90640  
ID#: 23487

### **EQUIPMENT DESCRIPTION:**

A/N 501390: Existing equipment operating w/o permit – P/O no P/C

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
<b>Process 4: Cleaner</b>					
CLEANER, PORTABLE, HIGH PRESSURE WATER WASHER, HYDROTEK, MODEL NO. HX35005-E3, DIESEL FUEL, BECKETT MODEL AF/AFG SERIES BURNER NO. 00410-67344, 2.5 GPM MAX DIESEL  A/N 501390	D26			CO: 2000 PPMV (RULE 407); PM: (RULE 404); PM: 0.1 GRAINS/SCF (RULE 409)	B59.5 C1.4 E71.1 H23.2

A/N 541585: Title V permit revision application, de minimis significant

~~A/N 500494: Title V permit revision application~~ – Cancelled, include with A/N 541585 subsequent app.

### **CONDITIONS:**

B59.5:

THE OPERATOR SHALL ONLY USE THE FOLLOWING MATERIAL(S) IN THIS DEVICE:

WATER

C1.4

THE OPERATOR SHALL LIMIT THE FUEL OIL USAGE TO NO MORE THAN 150 GALLON(S) IN ANY ONE CALENDAR MONTH.

THE OPERATOR SHALL MAINTAIN RECORDS IN A MANNER APPROVED BY THE DISTRICT, TO DEMONSTRATE COMPLIANCE WITH THIS CONDITION.

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E71.1:

THE OPERATOR SHALL ONLY OPERATE THIS EQUIPMENT USING DIESEL FUEL.

H23.2:

THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:

CONTAMINANT:

NOX

RULE:

DISTRICT RULE

RULE/SUBPART:

1147

PRIOR TO MODIFICATION OF THIS EQUIPMENT TO COME INTO COMPLIANCE WITH THE EMISSION LIMIT OF THIS RULE, THE OPERATOR SHALL SUBMIT AN APPLICATION AND RECEIVE APPROVAL FOR CONSTRUCTION OR MODIFICATION OF THE EQUIPMENT.

### **BACKGROUND:**

Royal Paper Box submitted application no. 501390 to permit an existing portable, electric-powered, diesel-heated hot water pressure washer. The washer replaced a previous washer that was permitted under A/N 344301 (Device No. D17). Current amended version of Rule 1147 applies to the operation of the unit and based on its purchase date of August 2009, compliance with the NOx emission limit is required by July 1, 2024. The applicant is aware of Rule 1147 requirements.

Royal Paper Box is a Title V facility. The second Title V renewal permit was issued to this facility on October 6, 2009. Royal Paper Box has proposed to revise their Title V renewal permit by adding a portable diesel-heated hot water pressure washer. This permit revision is considered as a “de minimis significant permit revision” to the Title V renewal permit, as described in the Regulation XXX evaluation. Also included with this revision is a new litho printing system (D31-D33) under A/N 541584 and the admin. revision to convert a P/C for litho printing system (D28-D30) to a P/O under A/N 523529 (see separate evaluations).

The facility was issued an N/C on 7/1/2011 to provide VOC records from 7/2010 to 6/2011 and failure to perform recertification test for gasoline dispensing equipment. They were found in compliance by 8/18/2011.

### **PROCESS DESCRIPTION:**

Royal Paper Box is a commercial lithographic printing facility that produces printed, folded paper boxes primarily for retail and pharmaceutical business sectors. VOC is emitted from the inks, coatings, fountain solution and washes used in the printing process. The washer is used to clean parts and tools with high pressure hot water in lieu of using solvent-based cleaners. The washer is a small electric-powered pressure washer with a heating coil that is fueled by diesel.

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The fuel flow rate ranges from 1.65 to 2.5 gal/hr and water flow is 4.3 gal/min (max.). Diesel fuel usage will be limited to 150 gal/mon. Using a energy conversion factor of 139,600 Btu/gal diesel, the heat output of the burner ranges from 230,340 to 349,000 Btu/hr. The washer is used on an infrequent basis, up to 2 hr/day, 1 day/wk and 25 wk/yr.

### **EMISSIONS CALCULATIONS:**

There is a slight emission increase with the new washer since its maximum fuel flow rate is greater than that of the previous washer (2.5 vs. 1.6 gal/hr). Emissions estimates are made using emission factors from the Annual Emissions Reporting program

Fuel: Diesel

Fuel flow rate: 1.65 to 2.5 gal/hr

Energy conversion factor: 139,600 Btu/gal diesel

Burner heat output: 230,340 to 349,000 Btu/hr

ROG emission factor: 1.32 lb/1000 gal

NOx emission factor: 20 lb/1000 gal

SOx emission factor: 7.1 lb/1000 gal

CO emission factor: 5 lb/1000 gal

PM emission factor: 2 lb/1000 gal

Hourly ROG emissions = 2.5 gal/hr x 1.32 lb/1000 gal = 0.003 lb/hr

Daily ROG emissions = 0.003 lb/hr x 2 hr/day = 0.006 lb/day

Hourly NOx emissions = 2.5 gal/hr x 20 lb/1000 gal = 0.05 lb/hr

Daily NOx emissions = 0.05 lb/hr x 2 hr/day = 0.1 lb/day

Hourly SOx emissions = 2.5 gal/hr x 7.1 lb/1000 gal = 0.018 lb/hr

Daily SOx emissions = 0.018 lb/hr x 2 hr/day = 0.036 lb/day

Hourly CO emissions = 2.5 gal/hr x 5 lb/1000 gal = 0.013 lb/hr

Daily CO emissions = 0.013 lb/hr x 2 hr/day = 0.026 lb/day

Hourly PM emissions = 2.5 gal/hr x 2 lb/1000 gal = 0.005 lb/hr

Daily PM emissions = 0.005 lb/hr x 2 hr/day = 0.01 lb/day

### **Summary of Emissions (lb/day)**

	ROG	NOx	SOx	CO	PM
<b>New Emissions</b>	0.006	0.1	0.036	0.026	0.01
<b>Previous Emissions</b>	0.0006	0.064	0.023	0.016	0.006
<b>Net emission Increase</b>	0.005	0.036	0.013	0.01	0.004

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## **RISK ASSESSMENT**

Toxic air contaminants are emitted due to the combustion of diesel fuel. There will only be a slight increase in TAC emissions with the new washer due to the larger fuel rate compared to the previous washer. Nevertheless, the risk is considered negligible and the washer complies with Rule 1401.

## **RULE ANALYSIS:**

RULE 212 (c)(1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1,000 feet from the outer boundary of a school. The facility is not located within 1,000 feet of the outer boundary of a school. The closest school located to the facility is 0.3 miles away (Vail High School, 1230 S. Vail Ave., Montebello). Public notice not required by this section.

RULE 212 (c)(2): This section requires a public notice for all new or modified facilities that have on-site emission increases exceeding any of the daily maximums as specified by Rule 212(g). Slight emission increase does not exceed maximum limits. Public notice not required by this section.

RULE 212(c)(3): Public notice is not required since there will not be a cancer risk equal or greater than one in a million.

RULE 212(g): This section requires a public notice for all new or modified sources that result in emission increases exceeding any of the daily maximums as specified by Rule 212(g). Emission increase does not exceed the limits of this rule.

	Maximum Daily Emissions					
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>2</sub>	CO	Pb
Emission increase	0	0.036	0	0.013	0.01	0
MAX Limit (lb/day)	<b>30</b>	<b>40</b>	<b>30</b>	<b>60</b>	<b>220</b>	<b>3</b>
Compliance Status	Yes	Yes	Yes	Yes	Yes	Yes

RULES 401 & 402: AQMD database has no records of visible emissions or nuisance complaints against this facility. Compliance with these requirements is expected with the proper operation of the equipment.

RULE 1147: The washer is operated using diesel fuel. The applicable NO<sub>x</sub> emission limit is 40 ppmv. Compliance is required July 1, 2024, fifteen years after the purchase date of the washer, August 2009.

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### REG. XIII

1303(a): BACT is not applicable since there is not an emission increase of 1 lb/day of any criteria pollutant.

1303(b)(1): Hourly emissions of NO<sub>x</sub>, CO and PM<sub>10</sub> are below the limits, modeling is not required.

1303(b)(2): Emission offsets are not required since there is not an emission increase over 0.5 lb/day of any pollutant.

1303(b)(4): The facility is expected to be in full compliance with all applicable rules and regulations of the District.

RULE 1401: Compliance is expected, see RISK ASSESSMENT paragraph.

### **REGULATION XXX:**

The proposed project is considered as a “de minimis significant permit revision” to the Title V permit issued to this facility. Rule 3000(b)(6) defines a “de minimis significant permit revision” as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAP) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

<b>Air Contaminant</b>	<b>Daily Maximum (lb/day)</b>
HAP	30
VOC	30
NO <sub>x</sub>	40
PM <sub>10</sub>	30
SO <sub>x</sub>	60
CO	220

Rule 3003(j) specifies that a proposed permit for a Title V permit revision shall be submitted to EPA for review. To determine if a project qualifies for a “de minimis significant permit revision”, emission increases resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is the 3<sup>rd</sup> permit revision to the Title V renewal permit issued to this facility on October 6, 2009. Also included with this revision is a new litho printing system (D31-D33) under A/N 541584 and the admin. revision to convert a P/C for litho printing system (D28-D30) to a P/O under A/N 523529. The following table summarizes the cumulative

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emission increases resulting from all permit revisions since the Title V renewal permit was issued:

	Revision	HAP	VOC	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>x</sub>	CO
1 <sup>st</sup>	Add Device no. D27 (UV curing oven) – A/N 513306	0	0	0	0	0	0
2 <sup>nd</sup>	Add Device nos. D28-D30 for a new lithographic printing press with IR and UV ovens (to replace D18-D20 – which will be removed when P/O issued) – A/N 523529	0	0	0	0	0	0
3 <sup>rd</sup>	Add Device nos. D31-D33 for a new lithographic printing press with IR and UV ovens (to replace D9, D10 & D25 – which will be removed when P/O issued) – A/N 541584	0	0	0	0	0	0
	Admin rev. Convert P/C for D28-D30 for a new lithographic printing press with IR and UV ovens to P/O for litho press (move from Section H to Section D). Remove replaced press D18-20. -A/N 523529	0	0	0	0	0	0
	Add pressure washer D26 for a new pressure washer, and remove replaced pressure washer D17 -A/N 501390	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Cumulative Emission Total	0	0	0	0	0	0
	Maximum Daily	30	30	40	30	60	220

Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or HAPs.

### **RECOMMENDATION:**

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “de minimis significant permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to the EPA for a 45-day review pursuant to Rule 3003(j). If the EPA does not raise any objections within the review period, a revised Title V permit (Sections D & H) will be issued to this facility with a P/O for this equipment (D26), a P/C for the new printing system (D31-D33) and a P/O for a printing system (D28-D30).

*royal paper box - portable cleaner 501390*